

Prüfbericht-Nr.: <i>Test Report No.:</i>	CN2691RR 001	Auftrags-Nr.: <i>Order No.:</i>	326146816	Seite 1 von 19 <i>Page 1 of 19</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	1288983	Auftragsdatum: <i>Order date.:</i>	2025-12-23	
Auftraggeber: <i>Client:</i>	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: <i>Test item:</i>	Rope Light			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	J2619			
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland EMC service			
Prüfgrundlage: <i>Test specification:</i>	FCC 47 CFR Part 15, Subpart B:2024 Class B ICES-005:2018			
Wareneingangsdatum: <i>Date of receipt:</i>	2025-01-27	Refer to the EUT photos file		
Prüfmuster-Nr.: <i>Test sample No.:</i>	A004196333- 003			
Prüfzeitraum: <i>Testing period:</i>	2026-02-13			
Ort der Prüfung: <i>Place of testing:</i>	Refer to clause 1.1			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i> 2026-03-17	Rambo Liu		HeXiong Liu	
Stellung: / Position	Project engineer	Ausstellungsdatum: <i>Issue date:</i> 2026-03-17		
Sonstiges / Other:	Stellung: / Position: Authorizer			
	FCC ID: FHO-J2619			
	Test Firm Name: TUV Rheinland (Shanghai) Co., Ltd.			
	Designation Number: CN1396			
	Test Firm Registration Number: 930979			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
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Prüfbericht - Nr.: CN2691RR 001
Test Report No.:

Seite 3 von 19
Page 3 of 19

Revision history of test report:

Report number	Issue date	Contents and reason for change if appropriate
CN2691RR 001	2026-03-17	Initial release.

Contents

1	TEST SITES	5
1.1	TEST FACILITIES	5
2	GENERAL PRODUCT INFORMATION	6
2.1	PRODUCT FUNCTION AND INTENDED USE	6
2.2	RATINGS AND SYSTEM DETAILS	6
2.3	INDEPENDENT OPERATION MODES	6
2.4	DESCRIPTION OF INTERCONNECTING CABLES.....	6
2.5	NOISE GENERATING AND NOISE SUPPRESSING PARTS	6
2.6	HIGHEST FREQUENCY GENERATED OR USED IN THE DEVICE OR ON WHICH THE DEVICE OPERATES OR TUNES	6
2.7	SUBMITTED DOCUMENTS.....	6
3	TEST SET-UP AND OPERATION MODES	7
3.1	PRINCIPLE OF CONFIGURATION SELECTION	7
3.2	EQUIPMENT AND CABLE ARRANGEMENT.....	7
3.3	PHYSICAL CONFIGURATION FOR TESTING.....	8
3.4	TEST OPERATION AND TEST SOFTWARE	8
3.5	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	8
3.6	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	8
4	CONFORMITY DECISION RULE	9
5	TEST RESULTS EMISSION	10
5.1	EMISSION IN THE FREQUENCY RANGE UP TO 30 MHz.....	10
5.1.1	Conducted Emission.....	10
5.2	EMISSION IN THE FREQUENCY RANGE ABOVE 30 MHz.....	14
5.2.1	Radiated Emission (30-1000 MHz).....	14
6	PHOTOGRAPHS OF THE TEST SET-UP.....	18
7	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	19
8	LIST OF FIGURES.....	19

1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.

Address: Workshop14, North Half of Workshop 10 and Workshop 16, Pingqian (Taicang) Modern Industrial Park, No.525, Yuewang Lingang South Road, Shaxi, Taicang, Jiangsu, China

The test equipment used is in accordance with CISPR 16-1 series standards for measurement of radio interference.

Refer to Clause 7 for test and measurement instruments.

2 General Product Information

2.1 Product Function and Intended Use

The EUT (equipment under test) is an ordinary rope light for lighting and similar use. For further information, refer to the user's manual.

2.2 Ratings and System Details

Rated input voltage : AC 120 V, 60 Hz
Rated current : 0.039 A
Rated power : 1.2 W

2.3 Independent Operation Modes

The basic operation modes are: "On" or "Off".
The test mode as follows:
"On": Continuously running illumination.

2.4 Description of interconnecting cables

None.

2.5 Noise Generating and Noise Suppressing Parts

Refer to the circuit diagram for further information.

2.6 Highest frequency generated or used in the device or on which the device operates or tunes

The highest frequency used in the EUT is 65 kHz.

2.7 Submitted Documents

Circuit diagram, user's manual and rating label.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible emission level. The test conditions were adapted accordingly in reference to the instructions for use.

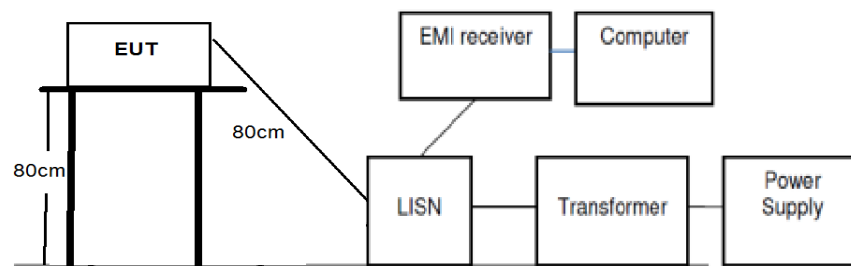
Refer to the related paragraph of this report.

The sequence of testing:

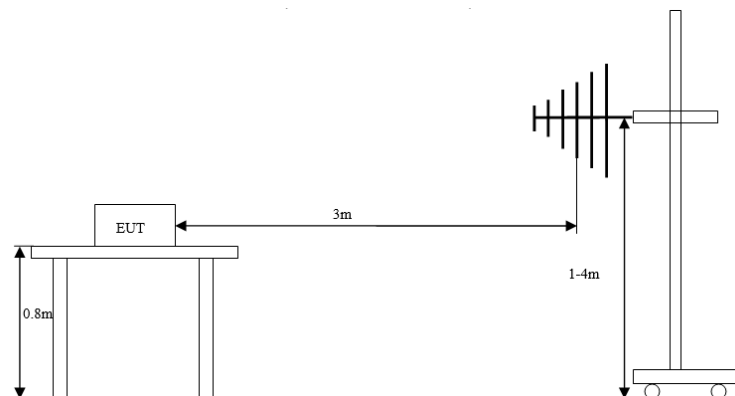
1. Conducted emission tests were performed on 2026-02-13.
2. Radiated emission tests were performed on 2026-02-13.

3.2 Equipment and cable arrangement

Block diagram for both conducted emission and radiated emission tests is as follows:



(Conducted emission)



(Radiated emission 30-1000 MHz)

Also refer to photographs on clause 6 for test setups for both conducted emission test and radiated emission tests.

3.3 Physical Configuration for Testing

Refer to the related paragraph of this report.

3.4 Test Operation and Test Software

Refer to the related paragraph of this report. No software was used.

3.5 Special Accessories and Auxiliary Equipment

During the tests, the following auxiliary equipment was used.

No.	Product	Model	Brand
1	LED driver	ICPSW24-3.6-IL-1 Input: AC 100-240 V, 50/60 Hz, Max.0.05 A Output: DC 24.0 V, Max.0.15 A, 3.6 W	IKEA

3.6 Countermeasures to achieve EMC Compliance

During tests, no special countermeasure was employed to achieve the requirement.

4 Conformity Decision Rule

For all EMI tests included in this report, as measurement uncertainties are less than the values U_{CISPR} given in CISPR 16-4-2, compliance with the limits is determined by comparing measurement results directly with corresponding limits without taking into consideration of measurement uncertainties.

5 Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Conducted Emission

Result:		Passed
Date of testing	: 2026-02-13	
Test procedure	: FCC 47 CFR Part 15, Subpart B:2024, ICES-005:2018, ANSI C63.4-2014 and CISPR 16-2-1	
Frequency range	: 0.15 – 30 MHz	
Limits	: Quasi-peak limit: 0.15 – 0.5 MHz, 66 to 56 dBμV (decrease with the logarithm of frequency); 0.5 – 5 MHz, 56 dBμV; 5 – 30 MHz, 60 dBμV Average limit: 0.15 – 0.5 MHz, 56 to 46 dBμV (decrease with the logarithm of frequency); 0.5 – 5 MHz, 46 dBμV; 5 – 30 MHz, 50 dBμV	
Bandwidth of EMI receiver for final measurement	: 9 kHz	
Measurement time for final measurement	: 1 s	
Kind of test site	: Shielded room	
Input voltage	: AC 120 V, 60 Hz (powered by LED driver)	
Operational mode	: Continuously running illumination.	
Ambient condition	: Temperature: 24.6 °C; Relative humidity: 43.4 %	
Expanded measurement uncertainty ($k=2$)	: 2.33 dB The minimum margin to the limit is 4.03 dB at 0.150000 MHz. The margin is higher than expanded measurement uncertainty.	
Test setup photo	: Photograph 1 of Attachment 3	

The measurement setup was made according to ANSI C63.4-2014 in a shielded room. The measurement equipment like test receivers, quasi-peak detector and artificial mains network (AMN) are in compliance with CISPR 16-1 series standards.

The tested object was set-up on a wooden support. The EUT was set 0.8 m away from the AMN. The cord longer than necessary to be connected to the AMN was folded forth and back parallel so as to form a bundle with a length between 0.3 m and 0.4 m. The disturbance voltage test was performed on the neutral line and phase line of the power supply of the EUT respectively.

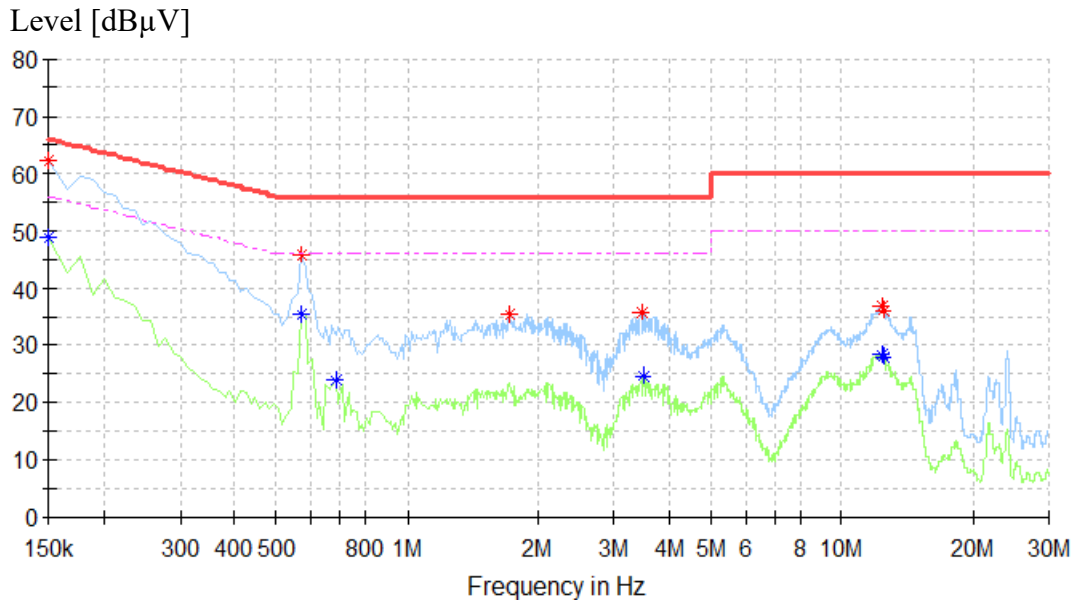
The following figures and tables were measured by an automatic measuring system. Both quasi-peak and average measurements were performed. In the following spectral diagram, “*” means Quasi-Peak Value and “*” means Average Value results.

Notes on following tables of conducted emission results and conversions:

Level (dB μ V): final measurement results by using quasi-peak detector and average detector
Transd (dB): transducer factor including cable loss, insertion loss of artificial mains network and gain of pre-amplifier (if used)

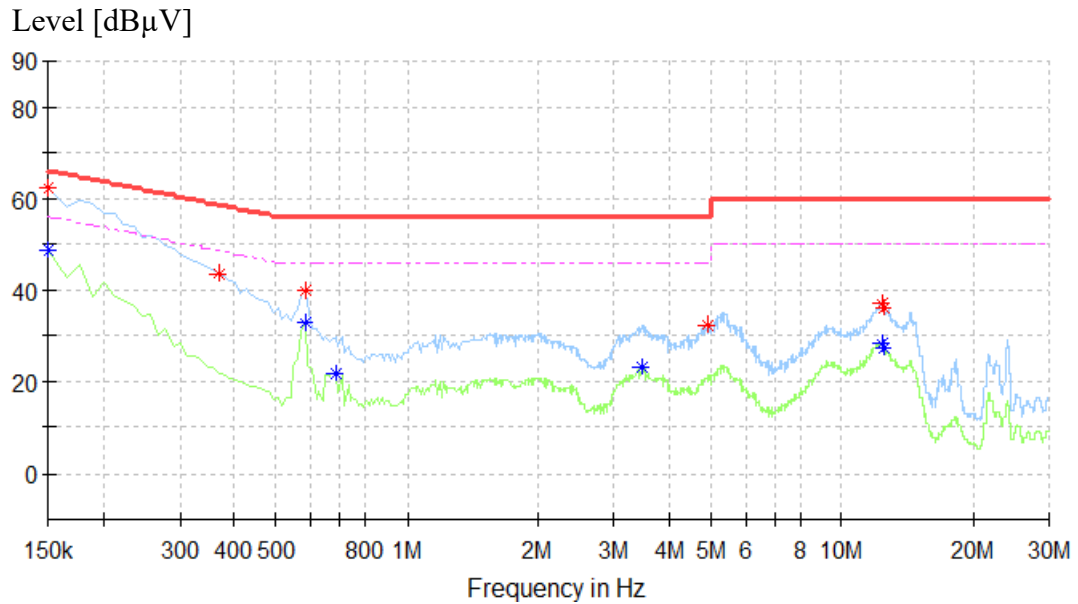
Margin: Limit (dB μ V) - Level (dB μ V)

Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, Line L



Final measurement result:

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line
0.150000	61.97	---	66.00	4.03	L1
0.150000	---	48.67	56.00	7.33	L1
0.571875	45.76	---	56.00	10.24	L1
0.571875	---	35.35	46.00	10.65	L1
0.684375	---	23.82	46.00	22.18	L1
1.719375	35.45	---	56.00	20.55	L1
3.474375	35.66	---	56.00	20.34	L1
3.496875	---	24.39	46.00	21.61	L1
12.271875	---	28.44	50.00	21.56	L1
12.294375	36.92	---	60.00	23.08	L1
12.406875	---	27.79	50.00	22.21	L1
12.418125	36.09	---	60.00	23.91	L1

Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, Line N


Final measurement result:

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line
0.150000	61.94	---	66.00	4.06	N
0.150000	---	48.56	56.00	7.44	N
0.369375	43.36	---	58.52	15.16	N
0.583125	39.54	---	56.00	16.46	N
0.583125	---	32.63	46.00	13.37	N
0.684375	---	21.80	46.00	24.20	N
3.474375	---	22.81	46.00	23.19	N
4.891875	32.56	---	56.00	23.44	N
12.271875	---	28.25	50.00	21.75	N
12.294375	36.95	---	60.00	23.05	N
12.406875	---	27.38	50.00	22.62	N
12.418125	36.12	---	60.00	23.88	N

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated Emission (30-1000 MHz)

Result:	Passed
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Date of testing	: 2026-02-13
Test procedure	: FCC 47 CFR Part 15, Subpart B:2024, ICES-005:2018, ANSI C63.4-2014 and CISPR 16-2-3
Product classification	: Class B
Frequency range	: 30 – 1000 MHz (<i>see note 1</i>)
Limits	: Quasi-peak limits (3 m distance): (<i>see note 2</i>) 30 – 88 MHz, 40 dB μ V/m; 88 – 216 MHz, 43.5 dB μ V/m; 216 – 1000 MHz, 46 dB μ V/m
Bandwidth of EMI receiver for final measurement	: 120 kHz
Measurement time for final measurement	: 1 s
Kind of test site	: Semi-anechoic chamber
Supply voltage	: AC 120 V, 60 Hz (powered by LED driver)
Operational mode	: Continuously running illumination.
Ambient condition	: Temperature: 25.4 °C; Relative humidity: 44.6 %
Expanded measurement uncertainty ($k=2$)	: 5.40 dB The minimum margin to the limit is 7.6 dB at 31.455000 MHz. The margin is higher than expanded measurement uncertainty.
Test setup photo	: Photograph 2 of Attachment 3

The radiated disturbance test was carried out in a semi-anechoic chamber. The test distance from the receiving antenna to the EUT is 3 m. The normalized site attenuation of the semi-anechoic chamber is regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on an 80 cm wooden support above the reference ground plane. The wooden support was rotated 360° around and the height of the antenna varied from 1 m to 4 m to find the maximum disturbance. The test was performed with the antenna both in its horizontal and vertical polarizations.

The following figures and tables were measured by an automatic measurement system. A preview test was first performed with peak detector. The final test was performed with quasi-peak at those critical frequencies during the preview test. In the following spectral diagram, “×” means quasi-peak test results.

Notes on following tables of radiated emission results and conversions:
 QuasiPeak (dB μ V/m): final measurement results by using quasi-peak detector
 Corr. (dB): correction factor including: antenna factor, cable loss, and gain of pre-amplifier (if used)
 Margin: Limit (dB μ V/m) - QuasiPeak (dB μ V/m)

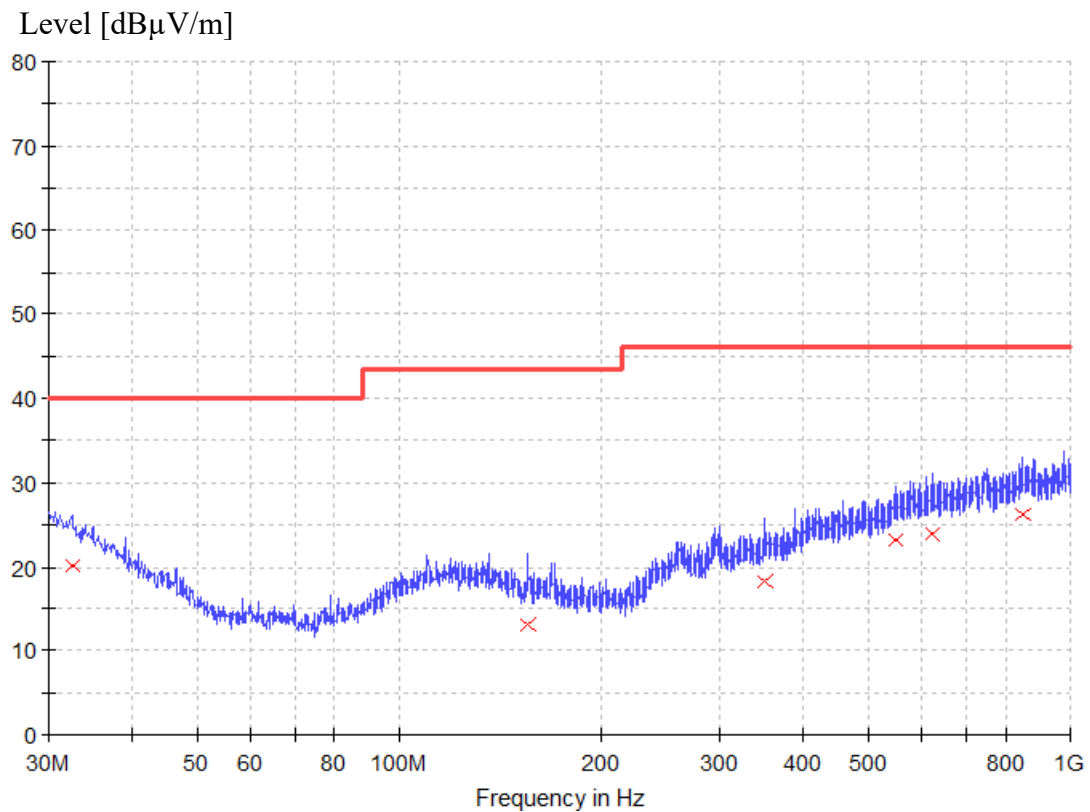
Prüfbericht - Nr.: CN2691RR 001
Test Report No.:

Seite 15 von 19
Page 15 of 19

Note 1: The highest frequency in the EUT is less than 108 MHz. According to FCC 47 CFR Part 15, Subpart B:2024 §15.33 (b) (1), the upper frequency for radiated emission measurement is 1000 MHz.

Note 2: The class B limits of ICES-005:2018 is stricter than those FCC 47 CFR Part 15, Subpart B:2024 for 3 m test distance. Therefore, the former limits are used in following figures and tables.

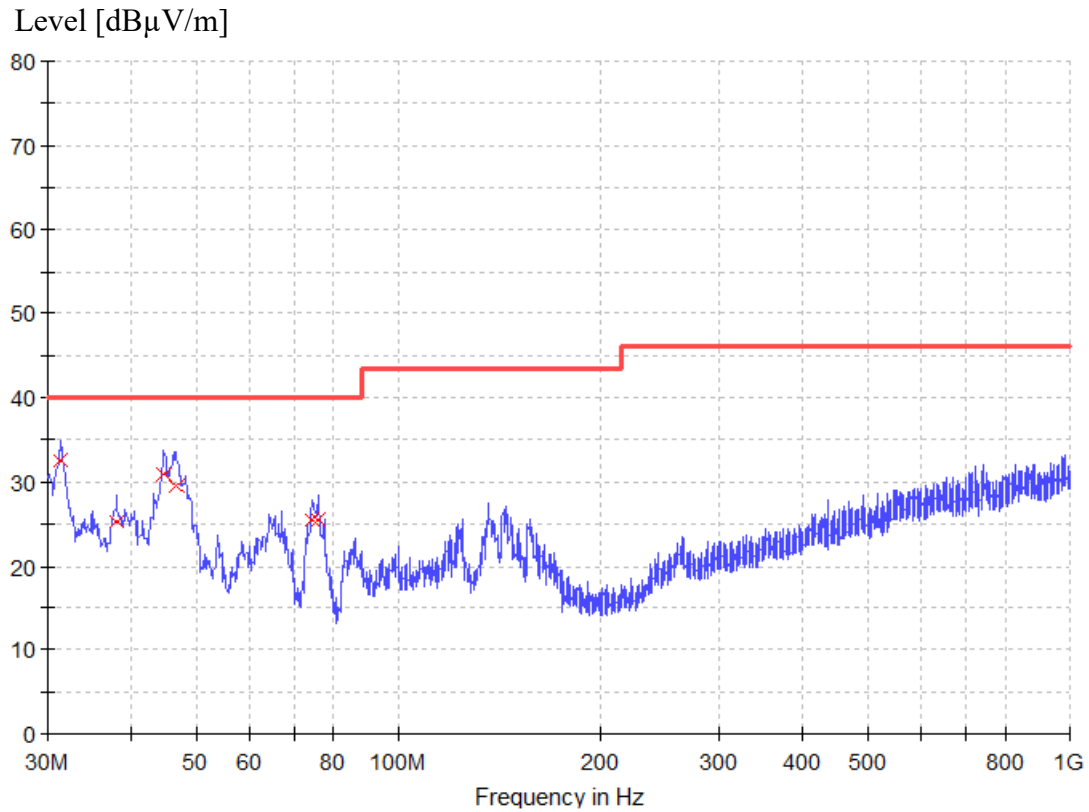
Figure 3: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dBμV/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
32.425000	20.1	120.000	137.0	H	-166.0	24.0	19.9	40.0
155.736250	13.1	120.000	182.0	H	-142.0	16.9	30.4	43.5
351.433750	18.1	120.000	119.0	H	-119.0	21.8	27.9	46.0
550.162500	23.1	120.000	164.0	H	-99.0	26.4	23.0	46.0
624.125000	23.9	120.000	113.0	H	-86.0	26.9	22.1	46.0
847.710000	26.2	120.000	109.0	H	-58.0	29.0	19.8	46.0

Figure 4: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization



Final quasi-peak measurement results:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)
31.455000	32.4	120.000	116.0	V	-166.0	24.6	7.6	40.0
38.002500	25.3	120.000	104.0	V	-146.0	20.9	14.7	40.0
44.792500	30.9	120.000	132.0	V	-127.0	17.2	9.1	40.0
46.611250	29.5	120.000	122.0	V	-107.0	16.3	10.5	40.0
74.256250	25.6	120.000	197.0	V	-87.0	13.1	14.4	40.0
76.075000	25.4	120.000	166.0	V	-64.0	13.3	14.6	40.0

Prüfbericht - Nr.: CN2691RR 001
Test Report No.:

Seite 18 von 19
Page 18 of 19

6 Photographs of the Test Set-Up

Refer to the test setup file.

7 List of Test and Measurement Instruments

Equipment no	Name	Model	Serial no	Manufacturer	Calibration date	Due date
EMC-S-028	EMI measurement software	EMC32-E+ (10.60.20)	100150	Rohde & Schwarz	N/A	N/A
EMC-C-366	Thermohygrometer	608-H1	2485149174	testo	2025-07-11	2026-07-11
EMC-C-195	EMI test receiver	ESR3	102794	Rohde & Schwarz	2025-08-02	2026-08-02
EMC-C-190	Artificial mains network	ENV432	101514	Rohde & Schwarz	2025-09-02	2026-09-02
EMC-S-032	EMI measurement software	EMC32-MEB (10.60.20)	100697	Rohde & Schwarz	N/A	N/A
EMC-C-155	BiLog antenna	CBL 6112D	40530	Teseq	2025-03-24	2026-09-24
EMC-C-121	Thermohygrometer	608-H1	1241320265	testo	2025-06-05	2026-06-05
EMC-C-066	EMI test receiver	ESCI	100280	Rohde & Schwarz	2025-09-28	2026-09-28
EMC-C-001	3 m semi-anechoic chamber	SAC3	FJ129002	Frankonia	2023-12-03	2026-12-03

8 List of Figures

Figure 1: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, Line L	12
Figure 2: Spectral Diagrams, Conducted Emission, 150 kHz – 30 MHz, Line N.....	13
Figure 3: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Horizontal polarization.....	16
Figure 4: Spectral Diagrams, Radiated Emission, 30 MHz – 1000 MHz, Vertical polarization	17

End of test report